

## SEQUENCE LISTING

<11> Fisher, Bill M.  
Wet, B

<11> 101-1, ANY OTHER INFORMATION  
PHOSPHATASES

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<141> 2001-01-01

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<211> 1949

<212> DNA

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1. 1980  
 2. 1981  
 3. 1982  
 4. 1983 Home Security

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971).

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| Met | Val | Ile | Arg | Leu | Trp | Ser | Asp | Thr | Lys | Ile | His | Leu | Asp | Gly | Asp |
| 1   |     |     |     | 6   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gly | Gly | Phe | Ser | Val | Ser | Thr | Ala | Gly | Arg | Met | His | Ile | Phe | Lys | Pro |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Ser | Val | Gln | Ala | Met | Trp | Ser | Ala | Leu | Gln | Val | Leu | His | Lys | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Cys | Glu | Val | Ala | Arg | Arg | His | Asn | Tyr | Phe | Pro | Gly | Gly | Val | Ala | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ile | Trp | Ala | Thr | Tyr | Tyr | Glu | Ser | Cys | Ile | Ser | Ser | Glu | Gln | Ser | Cys |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Ile | Asn | Glu | Trp | Asn | Ala | Met | Gln | Asp | Leu | Glu | Ser | Thr | Arg | Pro | Asp |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser | Pro | Ala | Leu | Phe | Val | Asp | Lys | Pro | Thr | Glu | Gly | Glu | Arg | Thr | Glu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |
| Arg | Leu | Ile | Lys | Ala | Lys | Leu | Arg | Ser | Ile | Met | Met | Ser | Gln | Asp | Leu |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Glu | Asn | Val | Thr | Ser | Lys | Glu | Ile | Arg | Asn | Glu | Leu | Glu | Lys | Gln | Met |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Asn | Cys | Asn | Leu | Lys | Glu | Leu | Lys | Glu | Phe | Ile | Asp | Asn | Glu | Met | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Leu | Ile | Leu | Gly | Gln | Met | Asp | Lys | Pro | Ser | Leu | Ile | Phe | Asp | His | Leu |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Tyr | Leu | Gly | Ser | Glu | Trp | Asn | Ala | Ser | Asn | Leu | Glu | Glu | Leu | Gln | Gly |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ser | Gly | Val | Asp | Tyr | Ile | Leu | Asn | Val | Thr | Arg | Glu | Ile | Asp | Asn | Phe |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Phe | Pro | Gly | Leu | Phe | Ala | Tyr | His | Asn | Ile | Arg | Val | Tyr | Asp | Glu | Glu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Tyr | Thr | Arg | Leu | Val | Ala | Val | Ser | Asn | Val | Ile | Tyr | Ile | Arg | Val | Asp |
|     |     |     | 225 |     |     |     |     | 230 |     |     |     |     |     |     | 235 |
| Leu | Ala | Trp | Asn | Ala | Phe | Arg | Val | Val | Val | Thr | Ser | Val | Val | Val | Val |
|     |     |     | 240 |     |     |     |     | 245 |     |     |     |     |     |     |     |
| Val | Ser | Arg | Ser | Ala | Arg | Thr | Val | Val | Ile | Tyr | Ala | Thr | Lys | Val | Arg |
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| Gly | Trp | Ile | Leu | Val | Lys | Ala | Tyr | Asn | Tyr | Val | Lys | Gln | Lys | Arg | Ser |
|     | 255 |     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     |
| Ile | Thr | Asn | Ile | Asn | Ala | Gly | Ile | Met | Arg | His | Leu | Ser | Val | Tyr | Ala |
|     | 265 |     |     |     |     | 270 |     |     |     |     | 275 |     |     |     |     |
| Arg | Thr | Val | Arg | Arg | Ser | Tyr | Arg | Arg | His | Asn | Leu | Leu | Ser | Arg | Ile |
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Tyr Tyr Phe Arg Arg Leu Ser Asp Pro Leu Leu Pro Ser Pro Glu Asp
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His Thr Gly Ser Ser Val His Leu Glu Asp Pro Glu Arg Glu Ala Leu
  393              398
Leu His Glu Ala Ala Pro Pro Ala Glu Val His Arg Pro Ala Arg Gln
  403              408
Pro Asn Gln Gly Ser Gly Leu Cys Glu Lys Asp Val Tyr Lys Lys Leu
  413              418
Glu Phe Gly Ser Pro Lys Gly Arg Ser Gly Ser Leu Leu Gln Val Glu
  423              428
Glu Thr Glu Arg Glu Glu Gly Leu Gly Ala Gly Arg Trp Gly Gln Leu
  433              438
Pro Thr Gln Leu Asp Gln Asn Leu Leu Asn Ser Glu Asn Leu Asn Asn
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Pro Ala Gly Trp His Thr Pro Ser Leu Pro Ser His Ser Asn Trp Pro
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Thr Ser Ala Ser Val Val Gly Thr Thr Gly Thr Arg His His Thr Gln
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545              550

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&lt;210&gt; 3

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 3

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Ile Ala Tyr Ala Met
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&lt;11&gt; 4

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&lt;112&gt; 181

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Cloned from the cDNA of a human placenta  
 human LNA having MAL-kinase phosphatase activity

&lt;41&gt; 4

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| tttgccaaaa  | tttttttttt  | cctcttggtt  | tttttttttt | tctccctgcc  | cttgagatata | 180  |
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 Phe Ile Asp Glu Ala Arg Gly Lys Asn Cys Gly Val Leu Val His Cys  
 100 105 110  
 Leu Ala Gly Ile Ser Arg Ser Val Thr Val Thr Val Ala Tyr Leu Met  
 115 120 125  
 Gln Lys Leu Asn Leu Ser Met Asn Asp Ala Tyr Asp Ile Val Lys Met  
 130 135 140  
 Lys Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe Met Gly Gln Leu Leu  
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 Asp Phe Glu Arg Thr Leu Gly Leu Ser Ser  
 165 170

<210> 24  
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 <212> PRT  
 <213> Homo sapiens

<400> 24  
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 Pro Ser Ser Ser Pro Ala His Pro Val Ser Ser Ser Ser Tyr Ser Tyr  
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 Leu Tyr Thr Ala Tyr Asn Ser Thr Asn Leu Val Thr Val Thr Thr Thr  
 45 50 55 60 65  
 Tyr Ser Tyr Tyr Tyr Ile Leu Asn Val Thr Ser Asn Leu Pro Asn Ala Pro  
 70 75 80 85 90  
 Glu His Gly Tyr Val Phe Thr Tyr Lys Glu Ile Pro Ile Ser Asp His  
 95 100 105 110 115  
 Trp Ser Gln Asn Leu Ser His Phe His Pro His Ala Ile Ser Phe Ile  
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 Asn Thr Asn Ser Tyr Tyr Tyr Tyr Tyr Tyr Tyr Tyr Tyr Tyr Tyr Tyr  
 150 155 160 165 170 175 180 185 190 195 200

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<211> 157
<212> 1RT
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| 5400 | 10  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| Gly  | Ala | Thr | Pro | Pro | Pro | Val | Gly | Leu | Arg | Ala | Ser | Phe | Pro | Val | Gln |  |  |  |
| 1    |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |  |  |  |
| Ile  | Leu | Pro | Asn | Leu | Tyr | Leu | Gly | Ser | Ala | Arg | Asp | Ser | Ala | Asn | Leu |  |  |  |
|      |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |  |
| Glu  | Ser | Leu | Ala | Lys | Leu | Gly | Ile | Arg | Tyr | Ile | Leu | Asn | Val | Thr | Pro |  |  |  |
|      |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |  |
| Asn  | Leu | Pro | Asn | Phe | Phe | Glu | Lys | Asn | Gly | Asp | Phe | His | Tyr | Lys | Gln |  |  |  |
|      | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |  |
| Ile  | Pro | Ile | Ser | Asp | His | Trp | Ser | Gln | Asn | Leu | Ser | Arg | Phe | Phe | Pro |  |  |  |
| 65   |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |  |
| Glu  | Ala | Ile | Glu | Phe | Ile | Asp | Glu | Ala | Leu | Ser | Gln | Asn | Cys | Gly | Val |  |  |  |
|      |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |  |
| Leu  | Val | His | Cys | Leu | Ala | Gly | Val | Ser | Arg | Ser | Val | Thr | Val | Thr | Val |  |  |  |
|      |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |  |
| Ala  | Tyr | Leu | Met | Gln | Lys | Leu | His | Leu | Ser | Leu | Asn | Asp | Ala | Tyr | Asp |  |  |  |
|      |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |  |
| Leu  | Val | Lys | Arg | Lys | Lys | Ser | Asn | Ile | Ser | Pro | Asn | Phe | Asn | Phe | Met |  |  |  |
|      | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |  |
| Gly  | Gln | Leu | Leu | Asp | Phe | Glu | Arg | Ser | Leu | Arg | Leu | Glu |     |     |     |  |  |  |
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<212> PRT
<213> Homo sapiens
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 His Tyr Leu Arg Thr Leu Lys Leu Leu Ala  
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 400-28  
 400-29  
 400-30

400-27  
 Pro Ala Gln Ala Leu Pro Pro Ala Gly Arg Gln Asn Ser Asn Ser Asp  
 1 5 10 15  
 Pro Arg Val Pro Ile Tyr Asp Gln Gly Pro Val Gln Ile Leu Pro  
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 Tyr Leu Tyr Leu Gly Ser Cys Asn His Ser Ser Asp Leu Gln Gly Leu  
 35 40 45  
 Gln Ala Cys Gly Ile Thr Ala Val Leu Asn Val Ser Ala Ser Cys Pro  
 50 55 60  
 Asn His Phe Glu Gly Leu Phe His Tyr Lys Ser Ile Pro Val Gln Asp  
 65 70 75 80  
 Asn Gln Met Val Glu Ile Ser Ala Trp Phe Gln Glu Ala Ile Ser Phe  
 85 90 95  
 Ile Asp Ser Val Lys Asn Ser Gly Gly Arg Val Leu Val His Cys Gln  
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 Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Ile Gln  
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 Ser His Arg Val Arg Leu Asp Glu Ala Phe Asp Phe Val Lys Gln Arg  
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 Arg Gly Val Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln  
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 Leu Glu Thr Gln Val Leu Cys His  
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 Ala Gly Ile Ser Arg Ser Ala Thr Ile Lys Leu Ala Tyr Leu Met Arg  
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 Thr Asn Arg Val Lys Leu Asp Thr Ala Phe Gln Phe Val Lys Gln Arg  
 30 35 40  
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 Phe Arg Ser Gln Val Leu Ala Pro His  
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<210> 19  
 <211> 169  
 <212> PRT  
 <213> Homo sapiens

<400> 19  
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 Asp Ala Leu Gly Ile Thr Ala Leu Leu Asn Val Ser Ser Asp Cys Pro  
 50 55 60  
 Asn His Phe Glu Gly His Tyr Gln Tyr Lys Cys Ile Pro Val Glu Asp  
 65 70 75 80  
 Asn His Lys Ala Asp Ile Ser Ser Trp Phe Met Glu Ala Ile Glu Tyr  
 85 90 95  
 Ile Asp Ala Val Lys Asp Cys Arg Gly Arg Val Leu Val His Cys Gln  
 100 105 110  
 Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Met  
 115 120 125  
 Lys Lys Arg Val Arg Leu Glu Glu Ala Phe Glu Phe Val Lys Gln Arg  
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 Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln  
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 Phe Glu Ser Gln Val Leu Ala Thr Ser  
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<210> 19  
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Ser His Thr Ala Asp Ile Ser Ser His Phe Glu Val Ala Ile Asp Ile  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 Ile Asp Cys Val Arg Glu Lys Gly Gly Lys Val Leu Val His Cys Glu  
 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
 Ala Gly Ile Ser Arg Ser Trp Thr Ile Cys Met Ala Tyr Leu Met Lys  
 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45  
 Thr Lys Glu Phe Arg Leu Lys Val Ala Phe Asp Tyr Ile Lys Glu Arg  
 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60  
 Arg Ser Met Val Ser Pro Asn Ile Gly Phe Met Gly Glu Leu Leu Glu  
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 Tyr Glu Ser Glu Ile Leu Pro Ser Thr Pro Asn  
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<211> 170

<212> FRT

<213> Homo sapiens

<400> 31

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 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
 His Leu Tyr Leu Gly Ser Glu Trp Asn Ala Ser Asn Leu Glu Glu Leu  
 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45  
 Glu Gly Ser Gly Val Asp Tyr Ile Leu Asn Val Thr Arg Glu Ile Asp  
 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60  
 Asn Phe Phe Pro Gly Leu Phe Ala Tyr His Asn Ile Arg Val Tyr Asp  
 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75  
 Glu Glu Thr Thr Asp Leu Leu Ala His Trp Asn Glu Ala Tyr His Phe  
 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90  
 Ile Asn Lys Ala Lys Arg Asn His Ser Lys Cys Leu Val His Cys Lys  
 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105  
 Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys  
 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120  
 Glu Phe Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Glu Lys  
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<211> 170

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<213> Homo sapiens

<400> 31

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 Asn Ile Ile Pro Gly Val Phe Gln Tyr His Asn Ile Arg Val Tyr Asp  
 45 50 55 60 65 70 75 80 85  
 Gln Gln Ala Thr Asp Leu Leu Ala Tyr Trp Asn Asp Thr Tyr Lys Phe  
 90 95 100 105 110 115 120 125 130  
 Ile Ser Lys Ala Lys Lys His Gly Ser Lys Lys Leu Val His Lys Lys  
 135 140 145 150 155 160 165 170  
 Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys  
 175 180 185 190 195 200 205 210  
 Glu Tyr Gly Trp Asn Leu Asp Arg Ala Tyr Asp Tyr Val Lys Glu Arg  
 215 220 225 230 235 240 245 250  
 Arg Thr Val Thr Lys Pro Asn Pro Ser Phe Met Arg Gln Leu Glu Glu  
 255 260 265 270 275 280 285 290  
 Tyr Gln Gly Ile Leu Leu Ala Ser Phe Leu  
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&lt;210&gt; 33

&lt;211&gt; 180

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 33

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 Asp Gly Ser Gly Cys Tyr Ser Leu Pro Ser Gln Pro Cys Asn Glu Val  
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 Thr Pro Arg Ile Tyr Val Gly Asn Ala Ser Val Ala Gln Asp Ile Pro  
 35 40 45  
 Lys Leu Gln Lys Leu Gly Ile Thr His Val Leu Asn Ala Ala Glu Gly  
 50 55 60  
 Arg Ser Phe Met His Val Asn Thr Asn Ala Asn Phe Tyr Lys Asp Ser  
 65 70 75 80  
 Gly Ile Thr Tyr Leu Gly Ile Lys Ala Asn Asp Thr Gln Glu Phe Asn  
 85 90 95  
 Leu Ser Ala Tyr Phe Gln Arg Ala Ala Asp Phe Ile Asp Gln Ala Leu  
 100 105 110 115 120 125 130  
 Arg Thr Ile Asn Tyr Ser Ile Val Ile Arg Thr Ser Ile Thr Ser Ser  
 135 140 145 150 155 160 165 170  
 Arg Thr Ile Thr Gly Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr  
 175 180 185 190 195 200 205 210  
 Arg Thr Lys Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg  
 215 220 225 230 235 240 245 250  
 Ile Asn Arg Gly Phe Leu Ala Arg Leu Tyr His Leu Asn Arg Arg Leu  
 255 260 265 270 275 280 285 290  
 Arg Lys Arg Lys